Iron and Steel Engineer Index for 1934

Herewith is presented the index of all the authors, papers and discussions published in the Iron and Steel Engineer for the year 1934.

LIST OF SUBJECTS

A

Acid Handling—A New Technique in—By J. R. Hoover, June, 1934, 215.
Affecting the Circulation of Oil—Factors—By Maurice Reswick, September 1934, 354.
A. I. & S. E. E. Development Committee—Developments in the Iron and Steel Industry, 1933-1934—By W. H. Burr, Chairman, September, 1934, 310.
Allied Industries—Welding Practices in the Iron and Steel and—By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E., January, 1934, 18.
Alloys—Heat Resisting—By M. J. Morris, March, 1934, 112.
Aluminum Bearing Shells for Heat Dissipation—By B. C. McFadden, March, 1934, 95.
Annealing and Tube Furnaces Installed in the United States—Soaking Pit, Heating—March, 1934, 127.
Annealing Furnaces—Tube Type—By Lee Wilson, August, 1934, 280.
Annealing—Use of Electric Furnaces for Box—By A. N. Otis, July, 1934, 248.
Answer—Load Factor and Power Cost—A Danger and a Possible—By P. M. Lincoln, December, 1934, 494.
Anti-Friction Bearing Progress in Steel Mill Equipment—By John L. Young, September, 1934, 384.
Anti-Friction Bearings as Applied to Hot and Cold Strip Mills—By F. C. Hallmark, January, 1934, 14.
Anti-Friction Bearings in Connection with Cold Mills—By C. J. Klein, January, 1934, 28.
Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of Applications of—September, 1934, 388.
Anti-Friction Roll Neck Bearings—Developments in Application of—By A. H. Frauenthal, September, 1934, 386.
Apparatus Applicable to Open Hearth Furnaces—Combustion Control—By G. A. Merkt, September, 1934, 375.
Applicable to Open Hearth Furnaces—Combustion Control Apparatus—By G. A. Merkt, September, 1934, 375.
Application—New Fuels and Their—By Martin Conway, April, 1934, 141.
Application of Anti-Friction Roll Neck Bearings—Developments in—By A. H. Frauenthal, September, 1934, 386.
Application of Bearings to Rolling Mills—Improvements in—By Gunnar Palmgren, September, 1934, 385.
Application of Gearmotors—Design and—By R. S. Marthens, April, 1934, 143.
Applications in Steel Heating Furnaces—Insulating Firebrick—By M. J. Terman, June, 1934, 218.
Applications of Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of—September, 1934, 388.
Applications of Roller Bearings—Recent Developments in Steel Mill—By D. E. Batesole, September, 1934, 387.
Applied to Hot and Cold Strip Mills—Anti-Friction Bearings as—By F. C. Hallmark, January, 1934, 14.
Applied to Secondary Cleaning of Blast Furnace Gas—Electrical Precipitation as—By G. T. Hollett, May, 1934, 175.
Arc Weld Metal—Nitrogen in Metallic—By J. W. Miller, November, 1934, 450.
Automatic Combustion Control of Open Hearths—By W. M. Shallcross, September, 1934, 379.

B

Bargaining—The Employee Representation Plan—Collective—By Tom M. Girdler, July, 1934, 270.
Batch Furnaces for Heating—Utilization of—By T. B. Bechtel and M. H. Mawhinney, July, 1934, 246.
Bath—Heat Transfer to the Open Hearth—By W. C. Buell, February, 1934, 57.
Bearing Progress—Composition and Lignum Vitae Roll Neck—By L. F. Coffin, September, 1934, 383.
Bearing Progress in Steel Mill Equipment—Anti-Friction—By John L. Young, September, 1934, 384.
Bearing Shells for Heat Dissipation—Aluminum—By B. C. McFadden, March, 1934, 95.
Bearings in Connection with Cold Mills—Anti-Friction—By C. J. Klein, January, 1934, 29.
Bearings as Applied to Hot and Cold Strip Mills—Anti-Friction—By F. C. Hallmark, January, 1934, 14.
Bearings—Developments in Application of Anti-Friction Roll Neck—By A. H. Frauenthal, September, 1934, 386.
Bearings—Recent Developments in Steel Mill Applications of Roller—By D. E. Batesole, September, 1934, 387.
Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of Application of Anti-Friction—September, 1934, 388.
Bearings to Rolling Mills—Improvements in Application of—By Gunnar Palmgren, September, 1934, 385.
Between the Employer and the Employee—Social and Industrial Relations—By Tom M. Girdler, October, 1934, 392.
Billet Chipping— Mechanical—By G. W. Lentz, November, 1934, 464.
Blast Cleaning of Steel—By W. A. Rosenberger, August, 1934, 286.
Blast Furnace Gas—Electrical Precipitation as Applied to Secondary Cleaning of—By G. T. Hollett, May, 1934, 175.
Blast Furnace Gas—Electrical Precipitators for Cleaning Washed—By K. E. Dinius, May, 1934, 172.
Blast Furnace Gas—Electrical Precipitators for the Cleaning of Washed—By H. M. Pier, May, 1934, 178.
Box Annealing—Use of Electric Furnaces for—By A. N. Otis, July, 1934, 248.
Builders Servicing the Iron and Steel Industry—A Guide for Equipment—January, 1934, 24.

C

Castings—Heat Resisting—By F. A. Fahrenwald, May, 1934, 186.
Centralized Lubrication in the Steel Industry—The Progress of—By A. J. Jennings, October, 1934, 396.
Characteristics of Temperature Controls for Oil Fired Furnaces—By W. N. Horko, July, 1934, 266.
Chipping—Mechanical Billet—By G. W. Lentz, November, 1934, 464.
Circulation of Oil-Factors Affecting the—By Maurice Reswick, September, 1934, 354.
Cleaning and Processing Machines—Special Electrical Drives for Steel—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Cleaning of Blast Furnace Gas—Electrical Precipitation as Applied to Secondary—By G. T. Hollett, May, 1934, 175.
Cleaning of Steel—By E. A. Rich, August, 1934, 284.
Cleaning of Steel—Blast—By W. A. Rosenberger, August, 1934, 284.
Cleaning of Washed Blast Furnace Gas—Electrical Precipitators for the—By H. M. Pier, May, 1934, 178.
Cleaning Washed Blast Furnace Gas—Electrical Precipitators for—By K. E. Dinius, May, 1934, 172.
Cold Mills—Anti-Friction Bearings in Connection with—By C. J. Klein, January, 1934, 28.
Cold Roll Strip Mills—Electrical Features of Modern—By A. F. Kenyon, March, 1934, 113.
Cold Strip Mills—Anti-Friction Bearings as Applied to Hot and—By F. C. Hallmark, January, 1934, 14.
Collective Bargaining—The Employee Representation Plan—By Tom M. Girdler, July, 1934, 270.
Combustion Control Apparatus Applicable to Open Hearth Furnaces—By G. A. Merkt, September, 1934, 375.
Combustion Control for Open Hearth Furnaces—By H. H. Gorrie, September, 1934, 374.
Combustion Control of Open Hearths—Automatic—By W. M. Shallcross, September, 1934, 379.
Compared to Fuel Fired Furnaces—Temperature Distribution of Electric Furnaces—By Wirt S. Scott, July, 1934, 257.
Comparative Values of Fuels in a Steel Mill—By H. V. Flagg, September, 1934, 338.

Iron and Steel Engineer Index for 1934

Herewith is presented the index of all the authors, papers and discussions published in the Iron and Steel Engineer for the year 1934.

LIST OF SUBJECTS

A

Acid Handling—A New Technique in—By J. R. Hoover, June, 1934, 215.
Affecting the Circulation of Oil—Factors—By Maurice Reswick, September 1934, 354.
A. I. & S. E. E. Development Committee—Developments in the Iron and Steel Industry, 1933-1934—By W. H. Burr, Chairman, September, 1934, 310.
Allied Industries—Welding Practices in the Iron and Steel and—By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E., January, 1934, 18.
Alloys—Heat Resisting—By M. J. Morris, March, 1934, 112.
Aluminum Bearing Shells for Heat Dissipation—By B. C. McFadden, March, 1934, 95.
Annealing and Tube Furnaces Installed in the United States—Soaking Pit, Heating—March, 1934, 127.
Annealing Furnaces—Tube Type—By Lee Wilson, August, 1934, 280.
Annealing—Use of Electric Furnaces for Box—By A. N. Otis, July, 1934, 248.
Answer—Load Factor and Power Cost—A Danger and a Possible—By P. M. Lincoln, December, 1934, 494.
Anti-Friction Bearing Progress in Steel Mill Equipment—By John L. Young, September, 1934, 384.
Anti-Friction Bearings as Applied to Hot and Cold Strip Mills—By F. C. Hallmark, January, 1934, 14.
Anti-Friction Bearings in Connection with Cold Mills—By C. J. Klein, January, 1934, 28.
Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of Applications of—September, 1934, 388.
Anti-Friction Roll Neck Bearings—Developments in Application of—By A. H. Frauenthal, September, 1934, 386.
Apparatus Applicable to Open Hearth Furnaces—Combustion Control—By G. A. Merkt, September, 1934, 375.
Applicable to Open Hearth Furnaces—Combustion Control Apparatus—By G. A. Merkt, September, 1934, 375.
Application—New Fuels and Their—By Martin Conway, April, 1934, 141.
Application of Anti-Friction Roll Neck Bearings—Developments in—By A. H. Frauenthal, September, 1934, 386.
Application of Bearings to Rolling Mills—Improvements in—By Gunnar Palmgren, September, 1934, 385.
Application of Gearmotors—Design and—By R. S. Marthens, April, 1934, 143.
Applications in Steel Heating Furnaces—Insulating Firebrick—By M. J. Terman, June, 1934, 218.
Applications of Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of—September, 1934, 388.
Applications of Roller Bearings—Recent Developments in Steel Mill—By D. E. Batesole, September, 1934, 387.
Applied to Hot and Cold Strip Mills—Anti-Friction Bearings as—By F. C. Hallmark, January, 1934, 14.
Applied to Secondary Cleaning of Blast Furnace Gas—Electrical Precipitation as—By G. T. Hollett, May, 1934, 175.
Arc Weld Metal—Nitrogen in Metallic—By J. W. Miller, November, 1934, 450.
Automatic Combustion Control of Open Hearths—By W. M. Shallcross, September, 1934, 379.

B

Bargaining—The Employee Representation Plan—Collective—By Tom M. Girdler, July, 1934, 270.
Batch Furnaces for Heating—Utilization of—By T. B. Bechtel and M. H. Mawhinney, July, 1934, 246.
Bath—Heat Transfer to the Open Hearth—By W. C. Buell, February, 1934, 57.
Bearing Progress—Composition and Lignum Vitae Roll Neck—By L. F. Coffin, September, 1934, 383.
Bearing Progress in Steel Mill Equipment—Anti-Friction—By John L. Young, September, 1934, 384.
Bearing Shells for Heat Dissipation—Aluminum—By B. C. McFadden, March, 1934, 95.
Bearings in Connection with Cold Mills—Anti-Friction—By C. J. Klein, January, 1934, 29.
Bearings as Applied to Hot and Cold Strip Mills—Anti-Friction—By F. C. Hallmark, January, 1934, 14.
Bearings—Developments in Application of Anti-Friction Roll Neck—By A. H. Frauenthal, September, 1934, 386.
Bearings—Recent Developments in Steel Mill Applications of Roller—By D. E. Batesole, September, 1934, 387.
Bearings to Roll Necks of Steel Rolling Mills of the United States—Tabulation of Application of Anti-Friction—September, 1934, 388.
Bearings to Rolling Mills—Improvements in Application of—By Gunnar Palmgren, September, 1934, 385.
Between the Employer and the Employee—Social and Industrial Relations—By Tom M. Girdler, October, 1934, 392.
Billet Chipping— Mechanical—By G. W. Lentz, November, 1934, 464.
Blast Cleaning of Steel—By W. A. Rosenberger, August, 1934, 286.
Blast Furnace Gas—Electrical Precipitation as Applied to Secondary Cleaning of—By G. T. Hollett, May, 1934, 175.
Blast Furnace Gas—Electrical Precipitators for Cleaning Washed—By K. E. Dinius, May, 1934, 172.
Blast Furnace Gas—Electrical Precipitators for the Cleaning of Washed—By H. M. Pier, May, 1934, 178.
Box Annealing—Use of Electric Furnaces for—By A. N. Otis, July, 1934, 248.
Builders Servicing the Iron and Steel Industry—A Guide for Equipment—January, 1934, 24.

C

Castings—Heat Resisting—By F. A. Fahrenwald, May, 1934, 186.
Centralized Lubrication in the Steel Industry—The Progress of—By A. J. Jennings, October, 1934, 396.
Characteristics of Temperature Controls for Oil Fired Furnaces—By W. N. Horko, July, 1934, 266.
Chipping—Mechanical Billet—By G. W. Lentz, November, 1934, 464.
Circulation of Oil-Factors Affecting the—By Maurice Reswick, September, 1934, 354.
Cleaning and Processing Machines—Special Electrical Drives for Steel—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Cleaning of Blast Furnace Gas—Electrical Precipitation as Applied to Secondary—By G. T. Hollett, May, 1934, 175.
Cleaning of Steel—By E. A. Rich, August, 1934, 284.
Cleaning of Steel—Blast—By W. A. Rosenberger, August, 1934, 284.
Cleaning of Washed Blast Furnace Gas—Electrical Precipitators for the—By H. M. Pier, May, 1934, 178.
Cleaning Washed Blast Furnace Gas—Electrical Precipitators for—By K. E. Dinius, May, 1934, 172.
Cold Mills—Anti-Friction Bearings in Connection with—By C. J. Klein, January, 1934, 28.
Cold Roll Strip Mills—Electrical Features of Modern—By A. F. Kenyon, March, 1934, 113.
Cold Strip Mills—Anti-Friction Bearings as Applied to Hot and—By F. C. Hallmark, January, 1934, 14.
Collective Bargaining—The Employee Representation Plan—By Tom M. Girdler, July, 1934, 270.
Combustion Control Apparatus Applicable to Open Hearth Furnaces—By G. A. Merkt, September, 1934, 375.
Combustion Control for Open Hearth Furnaces—By H. H. Gorrie, September, 1934, 374.
Combustion Control of Open Hearths—Automatic—By W. M. Shallcross, September, 1934, 379.
Compared to Fuel Fired Furnaces—Temperature Distribution of Electric Furnaces—By Wirt S. Scott, July, 1934, 257.
Comparative Values of Fuels in a Steel Mill—By H. V. Flagg, September, 1934, 338.

Composition and Lignum Vitae Roll Neck Bearing Progress—By L. F. Coffin, September, 1934, 383.
Connection With Cold Mills—Anti-Friction Bearings in—By C. J. Klein, January, 1934, 28.
Connection with Sheets—Hot Galvanizing in—By Nelson E. Cook, April, 1934, 135.
Control Apparatus Applicable to Open Hearth Furnaces—Combustion—By G. A. Merkt, September, 1934, 375.
Control for Open Hearth Furnaces—Combustion—By H. H. Gorrie, September, 1934, 374.
Control of Open Hearths—Automatic Combustion—By W. M. Shallcross, September, 1934, 379.
Control—Open Hearth Furnace—By M. J. Bradley, September, 1934, 376.
Controls for Oil Fired Furnaces—Characteristics of Temperature—By W. N. Horko, July, 1934, 266.
Cost—A Danger and a Possible Answer—Load Factor and Power—By P. M. Lincoln, December, 1934, 494.
Crane Statistics, 1928-1933—Electrically Operated—January, 1934, 16.
Cranes—Maintenance of—By F. W. Cramer, October, 1934, 411.
Cutting in Metal Working—Oxy-Acetylene Welding and—By W. S. Walker, December, 1934, 479.

D

Danger and a Possible Answer—Load Factor and Power Cost—A—By P. M. Lincoln, December, 1934, 494.
Data—Steel Plant Melting—March, 1934, 128.
Deposition of Metal—Electro—By John F. Kelly, March, 1934, 109.
Deseaming Purposes—Illumination for—By R. F. Sanner, September, 1934, 372.
Design and Application of Gearmotors—By R. S. Marthens, April, 1934, 142.
Design and Lubrication of Mill Reduction Gear Units—By Thomas Holloway, April, 1934, 155.
Design and Operation of Industrial Furnaces—Recent Developments in—By G. A. Merkt, February, 1934, 76.
Development Committee—Developments in the Iron and Steel Industry—1933-34—By W. H. Burr, Chairman A. I. & S. E. E., October, 1934, 310
Development of Lubricating System—Trend of—By R. M. Gordon, September, 1934, 382.
Developments in Application of Anti-Friction Roll Neck Bearings—By A. H. Frauenthal, September, 1934, 386.
Developments in Design and Operation of Industrial Furnaces—Recent—By G. A. Merkt, February, 1934, 76.
Developments in Pickling—By J. H. Snyder, March, 1934, 112-a.
Developments in Steel Mill Applications of Roller Bearings—Recent—By D. E. Batesole, September, 1934, 387.
Developments in the Iron and Steel Industry, 1933-1934—By W. H. Burr, Chairman, A. I. & S. E. E. Development Committee, October, 1934, 310
Developments in the Rolling of Sheets and Strip, 1934—By Stephen Badlam, December, 1934, 500.
Developments in the Steel Industry in 1933—Electrical—By H. A. Winne, January, 1934, 10.
Developments in the Steel Industry in 1933—Electrical—By R. H. Wright, January, 1934, 10.
DISCUSSION: Anti-Friction Bearings in Connection with Cold Mills—By B. R. Shover and W. R. Clark, January, 1934, 30.
DISCUSSION: Blast Cleaning of Steel—By J. Malborn, W. A. Rosenberger, J. H. Van Campen, and Stanley McKee, August, 1934, 295.
DISCUSSION: Cleaning of Blast Furnace Gas—By S. F. X. Plaisance, J. C. Hayes, G. T. Hollett, H. M. Pier, E. Kieft, A. J. Whitcomb, Gordon Fox, C. N. Arnold, R. Lindgren, H. A. Smith, W. E. Miller, K. E. Dinius, J. W. Murphy and S. A. Kish, May, 1934, 180.
DISCUSSION: Cleaning of Steels—By E. A. Rich, J. L. Miller, and W. A. Rosenberger, August, 1934, 285.
DISCUSSION: Design and Application of Gearmotors—By R. S. Marthens, L. F. Coffin, A. J. Standing, G. H. Schaeffer, R. F. Gale, F. O. Schnure, J. Hertrick, W. E. Miller, W. G. Hummel, H. K. Hardcastle, P. A. McTerney, L. C. Lucas, W. F. Frank, E. P. O'Neill and J. H. Flagg, April, 1934, 146.
DISCUSSION: Electric Drives for Flying Shears—By John C. Reed and L. A. Umansky, June, 1934, 239.
DISCUSSION: Electrical Equipment for High Speed Precision Merchant Mills—By L. A. Umansky, T. B. McElray, R. E. Hough, H. J. Baugh, H. G. R. Bennett, H. R. Mercer, and R. H. Wright, October, 1934, 409
DISCUSSION: Heat Resisting Castings—By F. A. Fahrenwald, N. B. Ornitz, J. H. Van Campen, R. S. Brown and M. A. Hunter, May, 1934, 210.
DISCUSSION: Heat Transfer to the Open Hearth Bath—By W. N. Flanagan, W. C. Buell, Jr., L. Larson, J. L. Miller, H. McClelland, H. V. Flagg, G A. Merkt, J. E. Dunn, M. J. Conway and Feodore F. Foss, February, 1934, 63.
DISCUSSION: Heating Slabs for Hot Strip Mills—By J. L. Miller, F. E. Leahy, W. R. Culbertson, H. V. Flagg, H. Dobrin, M. J. Conway and G. T. Hollett, February, 1934, 87.
DISCUSSION: Hot Galvanizing in Connection with Sheets—By R. J. Wean, Nelson E. Cook, J. H. Van Campen, E. A. Rich and J. Malborn, August, 1934, 300.
DISCUSSION: 76" Hot Strip Mill Inland Steel Company, Indiana Harbor, Ind.—By S. Badlam, R. W. Davis, L. A. Umansky, F. O. Schnure, C. J. Smith, G. Fox, J. O'Malia and A. J. Standing, December, 1934, 490
DISCUSSION: Load Factor and Power Cost—A Danger and a Possible Answer—By J. F. Gillespie, Paul M. Lincoln, A. G. Montgomery, J. Slepian and G. A. Hughes, December, 1934, 498.
DISCUSSION: Mechanical Billet Chipping—By W. E. Miller, A. J. Standing, M. J. Conway, G. W. Lentz, J. C. ler, A. J. Standing, M. J. Conway, G. W. Lenz, J. C. Reed and J. L. Miller, November, 1934, 467.
DISCUSSION: Nitrogen in Metallic Arc Weld Metal—By P. P. Alexander and H. M. Hobart, November, 1934, 461.
DISCUSSION: Pack and Pair Heating Furnaces in Connection with Sheet and Tin Mills—By F. E. Leahy, F. L. Estep, C. H. Verwohlt, R. J. Wean, N. B. Ornitz, H. V. Flagg, F. Oppenheimer, G. J. Hagan, T. B. Bechtel and W. E. Blythe, February, 1934, 72.
DISCUSSION: Precision Rolling Mills—By F. B. Crosby, F. H. Moyer, C. W. Meyers, H. G. R. Bennett, S. M. Weckstein and J. A. Clauss, November, 1934, 432.
DISCUSSION: Recent Developments in Design and Operation of Industrial Furnaces—By G. A. Merkt, C. L. Joly, M. J. Conway and Feodore F. Foss, February, 1934, 81.
DISCUSSION: Special Electrical Drives for Steel Cleaning and Processing Machines—By W. E. Miller, J. Farrington, G. E. Stoltz, A. J. Standing, H. A. Winne, J. C. Reed and A. M. MacCutcheon, November, 1934, 444
DISCUSSION: Tube Type Annealing Furnaces—By Lee Wilson, F. W. Brooke, F. E. Leahy and D. S. Bell, August, 1934, 282.
Dissipation—Aluminum Bearing Shells for Heat—By B. C. McFadden, March, 1934, 95.
Distribution of Electric Furnaces Compared to Fuel Fired Furnaces—Temperature—By Wirt S. Scott, July, 1934, 257.
Drives for Flying Shears—Electric—By L. A. Umansky, June, 1934, 224.
Drives Installed in Steel Mills During 1933—Main Roll—January, 1934, 15.
Drives for Steel Cleaning and Processing Machines—Special Electrical—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
During 1933—Main Roll Drives Installed in Steel Mills—January, 1934, 15.

E

Electric Drives for Flying Shears—By L. A. Umansky, June, 1934, 224.
Electric Furnaces Compared to Fuel Fired Furnaces—Temperature Distribution of—By Wirt S. Scott, July, 1934, 257.
Electric Furnaces for Box Annealing—Use of—By A. N. Otis, July, 1934, 248.
Electrical Developments in the Steel Industry in 1933—By H. A. Winne, January, 1934, 10.
Electrical Developments in the Steel Industry in 1933—By R. H. Wright, January, 1934, 10.
Electrical Drives for Steel Cleaning and Processing Machines—Special—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.

Electrical Equipment for High Speed Precision Merchant Mills—By R. H. Wright, October, 1934, 406.
Electrical Equipment—Safe Maintenance Work on Industrial—By J. D. Donovan, November, 1934, 446.
Electrical Features of Modern Cold Roll Strip Mills—By A. F. Kenyon, March, 1934, 113.
Electrical Precipitators for Cleaning Washed Blast Furnace Gas—By K. E. Dinius, May, 1934, 172.
Electrical Precipitators for the Cleaning of Washed Blast Furnace Gas—By H. M. Pier, May, 1934, 178.
Electrical Precipitation as Applied to Secondary Cleaning of Blast Furnace Gas—By G. T. Hollett, May, 1934, 175.
Electrically Operated Crane Statistics, 1928-1933, January, 1934, 16.
Electro Deposition of Metal—By John F. Kelly, March, 1934, 109.
Employee Representation Plan—Collective Bargaining—The —By Tom M. Girdler, July, 1934, 270.
Employee—Social and Industrial Relations Between the Employer and the—By Tom M. Girdler, October, 1934, 392.
Employer and the Employee—Social and Industrial Relations Between the—By Tom M. Girdler, October, 1934, 392.
Engineering Opinions—A Review of 1933—January, 1934, 1.
Equipment—Anti-Friction Bearing Progress in Steel Mill—By John L. Young, September, 1934, 384.
Equipment Builders Servicing the Iron and Steel Industry —A Guide for—January, 1934, 25.
Equipment for High Speed Precision Merchant Mills—Electrical—By R. H. Wright, October, 1934, 406.
Equipment for the Steel Industry—New—By R. J. Wean, September, 1934, 371.
Equipment—Safe Maintenance Work on Industrial Electrical—By J. D. Donovan, November, 1934, 446.
Expenditures in Normal Operating Years—The Steel Industry's—January, 1934, 27.

F

Factor and Power Cost—A Danger and a Possible Answer —Load—By P. M. Lincoln, December, 1934, 494.
Factors Affecting the Circulation of Oil—By Maurice Reswick, September, 1934, 354.
Features of Modern Cold Roll Strip Mills—Electrical—By A. F. Kenyon, March, 1934, 113.
Firebrick Applications in Steel Heating Furnaces—Insulating—By M. J. Terman, June, 1934, 218.
Fired Furnaces—Characteristics of Temperature Controls for Oil—By W. N. Horko, July, 1934, 266.
Fired Furnaces—Temperature Distribution of Electric Furnaces Compared to Fuel—By Wirt S. Scott, July, 1934, 257.
Flying Shears—Electric Drives for—By L. A. Umansky, June, 1934, 224.
Fuels and Their Application—New—By Martin J. Conway, April, 1934, 141.
Fuel Fired Furnaces—Temperature Distribution of Electric Furnaces Compared to—By Wirt S. Scott, July, 1934, 257.
Fuels in a Steel Mill—Comparative Values of—By H. V. Flagg, September, 1934, 338.
Furnace Gas—Electrical Precipitation as Applied to Secondary Cleaning of Blast—By G. T. Hollett, May, 1934, 175.
Furnace Gas—Electrical Precipitators for Cleaning Washed Blast—By K. E. Dinius, May, 1934, 172.
Furnace Gas—Electrical Precipitators for the Cleaning of Washed Blast—By H. M. Pier, May, 1934, 178.
Furnaces—Characteristics of Temperature Controls for Oil Fired—By W. N. Horko, July, 1934, 266.
Furnace Control—Open Hearth—By M. J. Bradley, September, 1934, 376.
Furnaces—Combustion Control Apparatus Applicable to Open Hearth—By G. A. Merkt, September, 1934, 375.
Furnaces—Combustion Control for Open Hearth—By H. H. Gorrie, September, 1934, 374.
Furnaces Compared to Fuel Fired Furnaces—Temperature Distribution of Electric—By Wirt S. Scott, July, 1934, 257.
Furnaces for Box Annealing—Use of Electric—By A. N. Otis, July, 1934, 248.
Furnaces for Heating—Utilization of Batch—By T. B. Bechtel and M. H. Mawhinney, July, 1934, 246.
Furnaces in Connection with Sheet and Tin Mills—Pack and Pair Heating—By R. J. Wean, February, 1934, 67.
Furnaces Installed in the Iron and Steel Industry in the United States—Soaking Pit, Heating, Annealing and Tube—March, 1934, 127.
Furnaces—Insulating Firebrick Applications in Steel Heating—By M. J. Terman, June, 1934, 218.
Furnaces—Recent Developments in Design and Operation of Industrial—By G. A. Merkt, February, 1934, 76.
Furnaces—Temperature Distribution of Electric Furnaces Compared to Fuel Fired—By Wirt S. Scott, July, 1934, 257.
Furnaces—Tube Type Annealing—By Lee Wilson, August, 1934, 280.

G

Galvanizing—By F. E. Leahy, March, 1934, 109.
Galvanizing in Connection with Sheets—Hot—By Nelson E. Cook, April, 1934, 135.
Gas—Electrical Precipitators for Cleaning Washed Blast Furnace—By K. E. Dinius, May, 1934, 172.
Gas—Electrical Precipitators for the Cleaning of Washed Blast Furnace—By H. M. Pier, May, 1934, 178.
Gas—Electrical Precipitation as Applied to Secondary Cleaning of Blast Furnace—By G. T. Hollett, May, 1934, 175.
Gearmotors—Design and Application of—By R. S. Marthens, April, 1934, 143.
Gear Units—Design and Lubrication of Mill Reduction—By Thomas Holloway, April, 1934, 155.
Generator Plants for the Steel Mill—Super Imposed Steam Turbine—By A. G. Darling, December, 1934, 469.
Glance—The Steel Industry at a—March, 1934, 125.
Growing—131 Years a—By J. S. Ervin, September, 1934, 373.
Guide for Equipment Builders Servicing the Iron and Steel Industry—A—January, 1934, 24.

H

Handling—A New Technique in Acid—By J. R. Hoover, June, 1934, 215.
Heat Dissipation—Aluminum Bearing Shells for—By B. C. McFadden, March, 1934, 95.
Heat Resisting Alloys—By M. J. Morris, March, 1934, 112.
Heat Resisting Castings—By F. A. Fahrenwald, May, 1934, 186.
Heat Transfer to the Open Hearth Bath—By W. C. Buell, February, 1934, 57.
Heating, Annealing and Tube Furnaces Installed in the United States—Soaking Pit—March, 1934, 127.
Heating Furnaces in Connection with Sheet and Tin Mills—Pack and Pair—By R. J. Wean, February, 1934, 67.
Heating Furnaces—Insulating Firebrick Applications in Steel—By M. J. Terman, June, 1934, 218.
Heating Slabs for Hot Strip Mills—By W. R. Culbertson, February, 1934, 85.
Heating—Utilization of Batch Furnaces for—By T. B. Bechtel and M. H. Mawhinney, July, 1934, 246.
High Speed Precision Merchant Mills—Electrical Equipment for—By R. H. Wright, October, 1934, 406.
Hot and Cold Strip Mills—Anti-Friction Bearings as Applied to—By F. C. Hallmark, January, 1934, 14.
Hot Galvanizing in Connection with Sheets—By Nelson E. Cook, April, 1934, 135.
Hot Strip Mill at Inland Steel Company, Indiana Harbor, Ind.—76"—By R. W. Davis, December, 1934, 486.
Hot Strip Mills—Heating Slabs for—By W. R. Culbertson, February, 1934, 85.
Hot Strip Mills—Lubrication of—By C. J. Duby, September, 1934, 379.
Houses—The Part Welding Will Play in Metal—By Bennett Chapple, January, 1934, 22.

I

Illumination for Deseaming Purposes—By R. F. Sanner, September, 1934, 372.
Improvements in Application of Bearings to Rolling Mills —By Gunnar Palmgren, September, 1934, 385.
Improvements, Iron and Steel Industry, 1928-1933, Inclusive—Major—January, 1934, 31.
Indiana Harbor, Ind.—76" Hot Strip Mill at Inland Steel Company—By R. W. Davis, December, 1934, 486.

Industrial Electrical Equipment—Safe Maintenance Work on—By J. D. Donovan, November, 1934, 446.
Industrial Furnaces—Recent Developments in Design and Operation of—By G. A. Merkt, February, 1934, 76.
Industrial Relations Between the Employer and the Employee—Social and—By Tom M. Girdler, October, 1934, 392.
Industries—Welding Practices in the Iron, Steel and Allied —By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E., January, 1934, 18.
Industry and Its Relations with Labor—The Iron and Steel —June, 1934, II.
Industry—A Guide for Equipment Builders Servicing the Iron and Steel—January, 1934, 24.
Industry at a Glance—The Steel—March, 1934, 125.
Industry in the United States—Soaking Pit, Heating, Annealing and Tube Furnaces Installed in the Iron and Steel—March, 1934, 127.
Industry in 1933—Electrical Developments in the Steel—By H. A. Winne, January, 1934, 10.
Industry in 1933—Electrical Development in the Steel—By R. H. Wright, January, 1934, 10.
Industry—New Equipment for the Steel—By R. J. Wean, September, 1934, 371.
Industry—Oxy-Acetylene Cutting and Welding in Metal—By W. S. Walker, December, 1934, 479.
Industry—Review and Outlook for the Iron and Steel—By Walter S. Tower, January, 1934, 12.
Industry—Super Refractories for the Iron and Steel—By W. F. Rochow, August, 1934, 297.
Industry—The Progress of Centralized Lubrication in the Steel—By A. J. Jennings, October, 1934, 396.
Industry—The Thirteen Month Year in—By Martin J. Conway, September, 1934, 370.
Industry under the National Recovery Act—Stabilization in the Steel—By Robert W. Wolcott, July, 1934, II.
Industry—Welding and the Steel—By A. E. Gibson, March, 1934, 93.
Industry's Expenditures in Normal Operating Years—The Steel—January, 1934, 27.
Industry, 1928-1933, Inclusive—Major Improvements, Iron and Steel—January, 1934, 31.
Industry—1933-34—Developments in the Iron and Steel—By W. H. Burr, Chairman, A. I. & S. E. E. Development Committee, October, 1934, 310.
Inland Steel Company, Indiana Harbor, Ind.—76" Hot Strip Mill at—By R. W. Davis, December, 1934, 486.
Inland Tin Plate Plant Now in Operation—New—February, 1934, 88.
Installed in Steel Mills During 1933—Main Roll Drives—January, 1934, 15.
Installed in the Iron and Steel Industry in the United States—Soaking Pit, Heating, Annealing and Tube Furnaces—March, 1934, 127.
Insulating Firebrick Applications in Steel Heating Furnaces —By M. J. Terman, June, 1934, 218.
Iron and Steel Industry—A Guide for Equipment Builders Servicing the—January, 1934, 24.
Iron and Steel Industry and Its Relations with Labor, —June, 1934, II.
Iron and Steel Industry in the United States—Soaking Pit, Heating, Annealing and Tube Furnaces Installed in the —March, 1934, 127.
Iron and Steel Industry—Review and Outlook for the—By Walter S. Tower, January, 1934, 12.
Iron and Steel Industry—Super Refractories for the—By W. F. Rochow, August, 1934, 297.
Iron and Steel Industry, 1928-1933, Inclusive—Major Improvements—January, 1934, 31.
Iron and Steel Industry, 1933-1934—Developments in the—By W. H. Burr, Chairman, A. I. & S. E. E. Development Committee, October, 1934, 310.
Iron, Steel and Allied Industries—Welding Practices in the —By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E., January, 1934, 18.

L

Labor—The Iron and Steel Industry and Its Relations with —June, 1934, II.
Led in Safety Work—Steel—November, 1934, 434.
Lignum Vitae Roll Neck Bearing Progress—Composition and—By L. F. Coffin, September, 1934, 383.
Load Factor and Power Costs—A Danger and a Possible Answer—By Paul M. Lincoln, December, 1934, 494.
Lubricating System for Rolling Mills—By W. D. Hodson, September, 1934, 381.
Lubricating System—Trend of Development of—By R. M. Gordon, September, 1934, 382.
Lubrication in the Steel Industry—The Progress of Centralized—By A. J. Jennings, October, 1934, 396.
Lubrication of Hot Strip Mills—By C. J. Duby, September, 1934, 379.
Lubrication of Mill Reduction Gear Units—Design and—By Thomas Holloway, April, 1934, 155.
Lubrication of Mill Tables—By F. L. Gray, September, 1934, 380.

M

Machines—Special Electrical Drives for Steel Cleaning and Processing—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Main Roll Drives Installed in Steel Mills During 1933, January, 1934, 15.
Maintenance of Cranes—By F. W. Cramer, October, 1934, 411.
Maintenance Work on Industrial Electrical Equipment—Safe—By J. D. Donovan, November, 1934, 446.
Major Improvements, Iron and Steel Industry, 1928-1933, Inclusive, January, 1934, 31.
Mechanical Billet Chipping—By G. W. Lentz, November, 1934, 464.
Melting Data—Steel Plant—March, 1934, 128.
Merchant Mills—Electrical Equipment for High Speed Precision—By R. H. Wright, October, 1934, 406.
Metal Houses—The Part Welding Will Play in—By Bennett Chapple, January, 1934, 22.
Metal—Nitrogen in Metallic Arc Weld—By J. W. Miller, November, 1934, 450.
Metal Working—Oxy-Acetylene Welding and Cutting in—By W. S. Walker, December, 1934, 479.
Metals—Electro Deposition of—By John F. Kelly, March, 1934, 109.
Metallic Arc Weld Metal—Nitrogen in—By J. W. Miller, November, 1934, 450.
Mill at Inland Steel Company, Indiana Harbor, Ind.—76" Hot Strip—By R. W. Davis, December, 1934, 486.
Mill Applications of Roller Bearings—Recent Developments in Steel—By D. E. Batesole, September, 1934, 387.
Mill—Comparative Values of Fuels in a Steel—By H. V. Flagg, September, 1934, 338.
Mill Equipment—Anti-Friction Bearing Progress in Steel—By John L. Young, September, 1934, 384.
Mill Reduction Gear Units—Design and Lubrication of—By Thomas Holloway, April, 1934, 155.
Mill—Super-Imposed Steam Turbine Generator Plants for the Steel—By A. G. Darling, December, 1934, 469.
Mill Tables—Lubrication of—By F. L. Gray, September, 1934, 380.
Mills—Anti-Friction Bearings as Applied to Hot and Cold Strip—By F. C. Hallmark, January, 1934, 14.
Mills—Anti-Friction Bearings in Connection With Cold—By C. J. Klein, January, 1934, 28.
Mills During 1933—Main Roll Drives Installed in Steel—January, 1934, 15.
Mills—Electrical Equipment for High Speed Precision Merchant—By R. H. Wright, October, 1934, 406.
Mills—Electrical Features of Modern Cold Roll Strip—By A. F. Kenyon, March, 1934, 113.
Mills—Heating Slabs for Hot Strip—By W. R. Culbertson, February, 1934, 85.
Mills—Improvements in Application of Bearings to Rolling —By Gunnar Palmgren, September, 1934, 385.
Mills—Lubricating System for Rolling—By W. D. Hodson, September, 1934, 381.
Mills—Lubrication of Hot Strip—By C. J. Duby, September, 1934, 379.
Mills of the United States—Tabulation of Applications of Anti-Friction Bearings to Roll Necks of Steel Rolling—September, 1934, 388.
Mills—Pack and Pair Heating Furnaces in Connection with Sheet and Tin—By R. J. Wean, February, 1934, 67.

Mills—Precision Rolling—By S. M. Weckstein, November, 1934, 427.
Modern Cold Roll Strip Mill—Electrical Features of—By A. F. Kenyon, March, 1934, 113.
Month Year in Industry—The Thirteen—By Martin J. Conway, September, 1934, 370.

N

National Recovery Act—Stabilization in the Steel Industry under the—By Robert W. Wolcott, July, 1934, II.
National Recovery—Steel's Part in—By Walter S. Tower, May, 1934, 185.
Neck Bearing Progress—Composition and Lignum Vitae Roll—By L. F. Coffin, September, 1934, 383.
Neck Bearings—Developments in Application of Anti-Friction Roll—By A. H. Frauenthal, September, 1934, 386.
Necks of Steel Rolling Mills of the United States—Tabulations of Applications of Anti-Friction Bearings to Roll—September, 1934, 388.
New Equipment for the Steel Industry—By R. J. Wean, September, 1934, 371.
New Fuels and Their Application—By M. J. Conway, April, 1934, 141.
New Inland Tin Plate Plant Now in Operation, February, 1934, 88.
New Technique in Acid Handling—A—By J. R. Hoover, June, 1934, 215.
New Year's Statement—By A. W. Robertson, January, 1934, 12.
Nitrogen in Metallic Arc Weld Metal—By J. W. Miller, November, 1934, 450.
Normal Operating Years—The Steel Industry's Expenditures in—January, 1934, 27.

O

Oil—Factors Affecting the Circulation of—By Maurice Reswick, September, 1934, 354.
Oil Fired Furnaces—Characteristics of Temperature Controls for—By W. N. Horko, July, 1934, 266.
Open Hearth Bath—Heat Transfer to the—By W. C. Buell, February, 1934, 57.
Open Hearth Furnace Control—By M. J. Bradley, September, 1934, 376.
Open Hearth Furnaces—Combustion Control Apparatus Applicable to—By G. A. Merkt, September, 1934, 375.
Open Hearth Furnaces—Combustion Control—for—By H. H. Gorrie, September, 1934, 374.
Open Hearths—Automatic Combustion Control of—By W. M. Shallcross, September, 1934, 379.
Operated Crane Statistics, 1928-1933—Electrically—January, 1934, 16.
Operating Years—The Steel Industry's Expenditures in Normal—January, 1934, 27.
Operation—New Inland Tin Plate Plant Now in—February, 1934, 88.
Operation of Industrial Furnaces—Recent Developments in Design and—By G. A. Merkt, February, 1934, 76.
Outlook for the Iron and Steel Industry—Review and—By Walter S. Tower, January, 1934, 12.
Outlook for 1934—The—By Gerard Swope, January, 1934, 13.
Oxy-Acetylene Welding and Cutting in Metal Working—By W. S. Walker, December, 1934, 479.
Opinions—A Review of 1933 Engineering—January, 1934, 1.

P

Pack and Pair Heating Furnaces in Connection with Sheet and Tin Mills—By R. J. Wean, February, 1934, 67.
Pair Heating Furnaces in Connection with Sheet and Tin Mills—Pack and—By R. J. Wean, February, 1934, 67.
Part in National Recovery—Steel's—By Walter S. Tower, May, 1934, 185.
Part Welding Will Play in Metal Houses—The—By Bennett Chapple, January, 1934, 22.
Pickling—Developments in—By J. H. Snyder, March, 1934, 112-a.
Pit, Heating, Annealing and Tube Furnaces Installed in the United States—Soaking—March, 1934, 127.
Plan—Collective Bargaining—The Employee Representation—By Tom M. Girdler, July, 1934, 270.
Plant Melting Data—Steel—March, 1934, 128.
Plant Now in Operation—New Inland Tin Plate—February, 1934, 88.
Plants for the Steel Mill—Super Imposed Steam Turbine Generator—By A. G. Darling, December, 1934, 469.
Plate Plant Now in Operation—New Inland Tin—February, 1934, 88.
Play in Metal Houses—The Part Welding Will—By Bennett Chapple, January, 1934, 22.
Possible Answer—Load Factor and Power Cost—A Danger and a—By P. M. Lincoln, December, 1934, 479.
Power Cost—A Danger and a Possible Answer—Load Factor and—By P. M. Lincoln, December, 1934, 479.
Practices in the Iron, Steel and Allied Industries—Welding—By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E., January, 1934, 18.
Precipitation as Applied to Secondary Cleaning of Blast Furnace Gas—Electrical—By G. T. Hollett, May, 1934, 175.
Precipitators for the Cleaning of Washed Blast Furnace Gas—Electrical—By H. M. Pier, May, 1934, 178.
Precipitators for Cleaning Washed Blast Furnace Gas—Electrical—By K. E. Dinius, May, 1934, 172.
Precision Merchant Mills—Electrical Equipment for High Speed—By R. H. Wright, October, 1934, 406.
Precision Rolling Mills—By S. M. Weckstein, November, 1934, 427.
Products—Welded Rolled Steel—By F. L. Lindemuth, April, 1934, 167.
Processing Machines—Special Electrical Drives for Steel Cleaning and—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Progress—Composition and Lignum Vitae Roll Neck Bearing—By L. F. Coffin, September, 1934, 383.
Progress in Steel Mill Equipment—Anti-Friction Bearing—By John L. Young, September, 1934, 384.
Progress of Centralized Lubrication in the Steel Industry—The—By A. J. Jennings, October, 1934, 396.
Purposes—Illumination for Deseaming—By R. F. Sanner, September, 1934, 372.

R

Recent Developments in Steel Mill Application of Roller Bearings—By D. E. Batesole, September, 1934, 387.
Recent Developments in Design and Operation of Industrial Furnaces—By G. A. Merkt, February, 1934, 76.
Recovery Act—Stabilization in the Steel Industry under the National—By Robert W. Wolcott, July, 1934, II.
Recovery—Steel's Part in National—By Walter S. Tower, May, 1934, 185.
Reduction Gear Units—Design and Lubrication of Mill—By Thomas Holloway, April, 1934, 155.
Refractories for the Iron and Steel Industry—Super—By W. F. Rochow, August, 1934, 297.
Refractories—Super—By J. L. Miller, March, 1934, 102.
Relations Between the Employer and the Employee—Social and Industrial—By Tom M. Girdler, October, 1934, 392.
Relations with Labor—The Iron and Steel Industry and Its—June, 1932, II.
Representative Plan—Collective Bargaining—The Employee—By Tom M. Girdler, July, 1934, 270.
Resisting Alloys—Heat—By M. J. Morris, March, 1934, 112.
Resisting Castings—Heat—By F. A. Fahrenwald, May, 1934, 186.
Review and Outlook for the Iron and Steel Industry—By Walter S. Tower, January, 1934, 12.
Review of 1933 Engineering Opinions—A—January, 1934, 1.
Roll Drives Installed in Steel Mills During 1933, January, 1934, 15.
Roll Neck Bearing Progress—Composition and Lignum Vitae—By L. F. Coffin, September, 1934, 383.
Roll Neck Bearings—Developments in Application of Anti-Friction—By A. H. Frauenthal, September, 1934, 386.
Roll Necks of Steel Rolling Mills of the United States—Tabulations of Applications of Anti-Friction Bearings to—September, 1934, 388.
Roll Strip Mills—Electrical Features of Modern Cold—By A. F. Kenyon, March, 1934, 113.
Rolled Steel Products—Welded—By F. L. Lindemuth, April, 1934, 167.
Roller Bearings—Recent Developments in Steel Mill Applications—By D. E. Batesole, September, 1934, 387.

Rolling Mills—Improvements in Applications of Bearings to—By Gunnar Palmgren, September, 1934, 385.
Rolling Mills—Lubricating System for—By W. D. Hodson, September, 1934, 381.
Rolling Mills of the United States—Tabulations of Applications of Anti-Friction Bearings to Roll Necks of Steel—September, 1934, 388.
Rolling Mills—Precision—By S. M. Weckstein, November, 1934, 427.
Rolling of Sheets and Strip, 1934—Developments in the—By Stephen Badlam, December, 1934, 500.

S

Safe Maintenance Work on Industrial Electrical Equipment—By J. D. Donovan, November, 1934, 446.
Safety Work—Steel Led in—November, 1934, 435.
Secondary Cleaning of Blast Furnace Gas—Electrical Precipitation as Applied to—By G. T. Hollett, May, 1934, 175.
Servicing the Iron and Steel Industry—A Guide for Equipment Builders—January, 1934, 24.
Shears—Electric Drives for Flying—By L. A. Umansky, June, 1934, 224.
Sheet and Tin Mills—Pack and Pair Heating Furnaces in Connection with—By R. J. Wean, February, 1934, 67.
Sheets and Strip, 1934—Developments in the Rolling of—By Stephen Badlam, December, 1934, 500.
Sheets—Hot Galvanizing in Connection with—By Nelson E. Cook, April, 1934, 135.
Shells for Heat dissipation—Aluminum Bearing—By B. C. McFadden, March, 1934, 95.
Slabs for Hot Strip Mills—Heating—By W. R. Culbertson, February, 1934, 85.
Social and Industrial Relations Between the Employer and the Employee—By Tom M. Girdler, October, 1934, 392.
Soaking Pit, Heating Annealing and Tube Furnaces Installed in the United States—March, 1934, 127.
Special Electrical Drives for Steel Cleaning and Processing Machines—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Stabilization in the Steel Industry under the National Recovery Act—By Robert W. Wolcott, July, 1934, II.
Statement—New Year's—By A. W. Robertson, January, 1934, 12.
Statistics, 1928-1933—Electrically Operated Crane—January, 1934, 16.
Steam Turbine Generator Plants for the Steel Mill—Super Imposed—By A. G. Darling, December, 1934, 469.
Steel and Allied Industries—Welding Practices in the Iron—By G. A. Hughes, Chairman, Welding Engineering Division of the A. I. & S. E. E.—January, 1934, 18.
Steel—Blast Cleaning of—By W. A. Rosenberger, August, 1934, 286.
Steel Cleaning and Processing Machines—Special Electrical Drives for—By A. M. MacCutcheon and W. R. Hough, November, 1934, 436.
Steel Heating Furnaces—Insulating Firebrick Applications in—By M. J. Terman, June, 1934, 218.
Steel Industry—A Guide for Equipment Builders Servicing the Iron and—January, 1934, 24.
Steel Industry and It's Relations with Labor—The Iron and—June, 1932, II
Steel Industry at a Glance—The—March, 1934, 125.
Steel Industry in the United States—Soaking Pit, Heating, Annealing and Tube Furnaces Installed in the Iron and—March, 1934, 127.
Steel Industry in 1933—Electrical Developments in the—By H. A. Winne, January, 1934, 10.
Steel Industry in 1933—Electrical Developments in the—By R. H. Wright, January, 1934, 10.
Steel Industry—New Equipment for the—By R. J. Wean, September, 1934, 371.
Steel Industry—Review and Outlook for the Iron and—By Walter S. Tower, January, 1934, 12.
Steel Industry—Super Refractories for the Iron and—By W. F. Rochow, August, 1934, 297.
Steel Industry—The Progress of Centralized Lubrication in the—By A. J. Jennings, October, 1934, 396.
Steel Industry under the National Recovery Act—Stabilization in the—By Robert W. Wolcott, July, 1934, II.
Steel Industry—Welding and the—By A. E. Gibson, March, 1934, 93.
Steel Industry, 1928-1933, Inclusive—Major Improvements, Iron and—January, 1934, 31.
Steel Industry's Expenditures in Normal Operating Years—The—January, 1934, 27.
Steel Led in Safety Work—November, 1934, 435.
Steel Mill Applications of Roller Bearings—Recent Developments in—By D. E. Batesole, September, 1934, 387.
Steel Mill—Comparative Values of Fuels in a—By H. V. Flagg, September, 1934, 388.
Steel Mill Equipment—Anti-Friction Bearing Progress in—By John L. Young, September, 1934, 384.
Steel Mills During 1933—Main Roll Drives Installed in—January, 1934, 15.
Steel Mill—Super-Imposed Steam Turbine Generator Plants for the—By A. G. Darling, December, 1934, 469.
Steel Plant Melting Data, March, 1934, 128.
Steel Products—Welded Rolled—By F. L. Lindemuth, April, 1934, 167.
Steel Rolling Mills of the United States—Tabulation of Applications of Anti-Friction Bearings to Roll Necks of—September, 1934, 388.
Steel's Part in National Recovery—By Walter S. Tower, May, 1934, 185.
Steels—Cleaning of—By E. A. Rich, August, 1934, 284.
Strip Mill at Inland Steel Company, Indiana Harbor, Ind.—76" Hot—By R. W. Davis, December, 1934, 486.
Strip Mills—Anti-Friction Bearings as Applied to Hot and Cold—By F. C. Hallmark, January, 1934, 14.
Strip Mills—Electrical Features of Modern Cold Roll—By A. F. Kenyon, March, 1934, 113.
Strip Mills—Heating Slabs for Hot—By W. R. Culbertson, February, 1934, 85.
Strip Mills, Lubrication of Hot—By C. J. Duby, September, 1934, 379.
Strip, 1934—Developments in the Rolling of Sheets and—By Stephen Badlam, December, 1934, 500.
Super Imposed Steam Turbine Generator Plants for the Steel Mill—By A. G. Darling, December, 1934, 469.
Super Refractories—By J. L. Miller, March, 1934, 102.
Super Refractories for the Iron and Steel Industry—By W. F. Rochow, August, 1934, 297.
System for Rolling Mills—Lubricating—By W. D. Hodson, September, 1934, 381.
System—Trend of Development of Lubricating—By R. M. Gordon, September, 1934, 382.

T

Tables—Lubrication of Mill—By F. L. Gray, September, 1934, 380.
Tabulation of Applications of Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the United States—September, 1934, 388.
Technique in Acid Handling—A New—By J. R. Hoover, June, 1934, 215.
Temperature Controls for Oil Fired Furnaces—Characteristics of—By W. N. Horko, July, 1934, 266.
Temperature Distribution of Electric Furnaces Compared to Fuel Fired Furnaces—By Wirt S. Scott, July, 1934, 257.
Thirteen Month Year in Industry—The—By Martin J. Conway, September, 1934, 370.
Tin Mills—Pack and Pair Heating Furnaces in Connection with Sheet and—By R. J. Wean, February, 1934, 67.
Tin Plate Plant Now in Operation—New Inland—February, 1934, 88.
Transfer to the Open Hearth Bath—Heat—By W. C. Buell, February, 1934, 57.
Trend of Development of Lubricating System—By R. M. Gordon, September, 1934, 382.
Tube Furnaces Installed in the United States—Soaking Pit, Heating, Annealing and—March, 1934, 127.
Tube Type Annealing Furnaces—By Lee Wilson, August, 1934, 280.
Turbine Generator Plants for the Steel Mill—Super-Imposed Steam—By A. G. Darling, December, 1934, 469.

U

United States—Soaking Pit, Heating, Annealing, and Tube Furnaces Installed in the Iron and Steel Industry in the—March, 1934, 127.

United States—Tabulation of Applications of Anti-Friction Bearings to Roll Necks of Steel Rolling Mills of the—September, 1934, 388.
Units—Design and Lubrication of Mill Reduction Gear—By Thomas Holloway, April, 1934, 155.
Use of Electric Furnaces for Box Annealing—By A. N. Otis, July, 1934, 248.
Utilization of Batch Furnaces for Heating—By T. B. Bechtel and M. H. Mawhinney, July, 1934, 246.

V

Values of Fuels in a Steel Mill—Comparative—By H. V. Flagg, September, 1934, 338.

W

Washed Blast Furnace Gas—Electrical Precipitators for Cleaning—By K. E. Dinius, May, 1934, 172.
Washed Blast Furnace Gas—Electrical Precipitators for the Cleaning of—By H. M. Pier, May, 1934, 178.
Weld Metal—Nitrogen in Metallic-Arc—By J. W. Miller, November, 1934, 450.
Welded Rolled Steel Products—By F. L. Lindemuth, April, 1934, 167.
Welding and Cutting in Metal Working—Oxy-Acetylene—By W. S. Walker, December, 1934, 497.
Welding and the Steel Industry—By A. E. Gibson, March, 1934, 93.
Welding Practices in the Iron, Steel and Allied Industries—By G. A. Hughes, Chairman, Welding Engineering Division, A. I. & S. E. E., January, 1934, 18.
Welding Will Play in Metal House—The—Part—By Bennett Chapple, January, 1934, 22.
Work on Industrial Electrical Equipment—Safe Maintenance—By J. D. Donovan, November, 1934, 446.
Work—Steel Led in Safety—November, 1934, 435.

Y

Year in Industry—The Thirteen Month—By Martin J. Conway, September, 1934, 370.
Years a Growing—131—By J. S. Ervin, September, 1934, 373.
Years—The Steel Industry's Expenditures in Normal Operating—January, 1934, 27.
76"-Hot Strip Mill at Inland Steel Company, Indiana Harbor, Indiana—By R. W. Davis, December, 1934, 486.
131 Years a Growing—By J. S. Ervin, September, 1934, 373.
1928-1933, Inclusive—Major Improvements, Iron and Steel Industry—January, 1934, 31.
1933—Electrical Developments in the Steel Industry in—By H. A. Winne, January, 1934, 10.
1933—Electrical Developments in the Steel Industry in—By R. H. Wright, January, 1934, 10.
1933—Engineering Opinions—A Review of—January, 1934, 1.
1933—Main Roll Drives Installed in Steel Mills During—January, 1934, 15.
1933-34—Developments in the Iron and Steel—Industy—By W. H. Burr, Chairman, A. I. & S. E. E. Developments Committee, October, 1934, 310.
1934—Developments in the Rolling of Sheets and Strip—By Stephen Badlam, December, 1934, 500.
1934—The Outlook for—By Gerard Swope, January, 1934, 13.

LIST OF AUTHORS

B

Badlam, Stephen, Developments in the Rolling of Sheets and Strip, 1934—December, 1934, 500.
Batesole, D. E., Recent Developments in Steel Mill Applications of Roller Bearings—September, 1934, 387.
Bechtel, T. B. and M. H. Mawhinney, Utilization of Batch Furnaces for Heating—July, 1934, 245.
Bradley, M. J., Open Hearth Furnace Control—September, 1934, 377.
Burr, Walter H., Developments in the Iron and Steel Industry, 1933-34—September, 1934, 310.

C

Chapple, Bennett, The Part Welding Will Play in Metal Houses—January, 1934, 22.
Clark, W. R., Discussion: Anti-Friction Bearings in Connection with Cold Mills—January, 1934, 30.
Coffin, L. F., Composition and Lignum Vitae Roll Neck Bearing Progress—September, 1934, 383.
Conway, Martin J., New Fuels and Their Application—April, 1934, 141.
The Thirteen Month Year in Industry—September, 1934, 370.
Cook, Nelson E., Hot Galvanizing in Connection with Sheets—April, 1934, 135.
Cramer, F. W., Maintenance of Cranes—October, 1934, 411.

D

Darling, A. G., Super Imposed Steam Turbine-Generator Plants for the Steel Mill—December, 1934, 469.
Davis, R. W., 76" Hot Strip Mill, Inland Steel Company, Indiana Harbor, Indiana—December, 1934, 486.
Dinius, K. E., Electrical Precipitators for Cleaning Washed Blast Furnace Gas—May, 1934, 172.
Donovan, J. D., Safe Maintentance Work on Industrial Electrical Equipment—November, 1934, 446.
Duby, C. J., Lubrication of Hot Strip Mills—September, 1934, 379.

E

Ervin, J. S., 131 Years a Growing—September, 1934, 373.

F

Fahrenwald, F. A., Heat Resisting Castings—May, 1934, 186.
Flagg, H. V., Comparative Values of Fuels in a Steel Mill—September, 1934, 338.
Frauenthal, A. H., Developments in Application of Anti-Friction Roll Neck Bearings—September, 1934, 386.

G

Gibson, A. E., Welding and the Steel Industry—March, 1934, 93.
Girdler, Tom M., Collective Bargaining—The Employee Representation Plan—July, 1934. 270.
Girdler, Tom M., Social and Industrial Relations Between the Employer and the Employee—October, 1934, 392.
Gordon, R. M., Trend of Development of Lubricating Systems—September, 1934, 382.
Gorrie, H. H., Combustion Control for Open Hearth Furnaces—September, 1934, 374.
Gray, Frank L., Lubrication of Mill Tables—September, 1934, 380.

H

Hallmark, F. C., Anti-Friction Bearings As Applied to Hot and Cold Strip Mills—January, 1934, 14.
Hodson, W. D., Lubricating System for Rolling Mills—September, 1934, 381.
Hollett, G. T., Electrical Precipitation as Applied to Secondary Cleaning of Blast Furnace Gas—May, 1934, 175.
Holloway, Thomas, Design and Lubrication of Mill Reduction Gear Units—April, 1934, 155.
Hoover, J. R., A New Technique in Acid Handling—June, 1934, 215.
Horko, W. N., Characteristics of Temperature Controls for Oil Fired Furnaces—July, 1934, 266.
Hough, W. R., and A. M. MacCutcheon, Special Electrical Drives for Steel Cleaning and Processing Machines—November, 1934, 436.
Hughes, Grover A., Welding Practices in the Iron, Steel and Allied Industries—January, 1934, 18.

J

Jennings, A. J., The Progress of Centralized Lubrication in the Steel Industry—October, 1934, 396.

WHY NOT MAKE IT EASY ON YOURSELF WHEN IT COMES TO FUSES ?

Why be bothered with needless blowing of fuses—or fuses burning up—or fuses that don't stand up under hard service conditions?

You can get a fuse that gives the best in protection—that stays in service year after year—and that helps prevent needless shutdowns.

These desirable results are obtainable with the BUSS SUPER-LAG fuse because:—

1. It uses the "Super-Lag" Principle. This prevents it from blowing on many of the harmless overloads or surges that so frequently cause ordinary fuses to "pop out".

2. The design is so simple and correct that the development of poor contact in the fuse is prevented. This eliminates another major cause of needless blows and costly shutdowns.

3. The design prevents injury to the link in renewing the fuse. This also prevents premature blows and costly shutdowns.

4. The preventing of poor contact in the fuse means that BUSS fuses, properly installed, will not char or burn up. This materially reduces fuse bills.

5. The quality and strength of each part and the scientific handling of the vapors formed when a fuse blows prevent the fuse destruction so common to ordinary fuses. This further reduces fuse bills.

Why not make it easy on yourself by saving time, trouble and money in your plant. A line to us will bring you full data by mail or a BUSS representative will call, if you prefer.

BUSSMANN MANUFACTURING COMPANY, 2536 W. University St., St. Louis, Mo.
A Division of the McGraw Electric Company

THE **BUSS SUPER-LAG** FUSE

A. I. & S. E. E.—TWENTY-SEVEN YEARS OF ENGINEERING SERVICE TO THE IRON & STEEL INDUSTRY

K

Kelly, John F., Electro Deposition of Metals—March, 1934, 109.
Kenyon, A. F., Electrical Features of Modern Cold Roll Strip Mills—March 1934, 113.
Klein, C. J., Anti-Friction Bearings in Connection with Cold Mills—January, 1934, 28.

L

Leahy, F. E., Galvanizing—March, 1934, 109.
Lentz, G. W., Mechanical Billet Chipping—November, 1934, 464.
Lincoln, Paul M., Load Factor and Power Cost—A Danger and a Possible Answer—December, 1934, 494.
Lindemuth, F. L., Welded Rolled Steel Products—April, 1934, 167.

M

MacCutcheon, A. M., and W. R. Hough, Special Electrical Drives for Steel Cleaning and Processing Machines—November, 1934, 436.
McFadden, B. C., Aluminum Bearing Shells for Heat Dissipation—March, 1934, 95.
Marthens, R. S., Design and Application of Gearmotors—April, 1934, 142.
Mawhinney, M. H. and T. B. Bechtel, Utilization of Batch Furnaces for Heating—July, 1934, 245.
Merkt, G. A., Combustion Control Apparatus Applicable to Open Hearth Furnaces—September, 1934, 375.
Miller, J. L., Super Refractories—March, 1934, 102.
Miller, J. W., Nitrogen in Metallic Arc Weld Metal—November, 1934, 450.
Morris, M. J., Heat Resisting Alloys—March, 1934, 112.

O

Otis, A. N., Use of Electric Furnaces for Box Annealing—July, 1934, 249.

P

Palmgren, Gunnar, Improvements in Application of Bearings to Rolling Mills—September, 1934, 385.
Pier, H. M., Electrical Precipitation for the Cleaning of Washed Blast Furnace Gas—May, 1934, 178.

R

Reswick, Maurice, Factors Affecting the Circulation of Oil—September, 1934, 334.
Rich, E. A., Cleaning of Steels—August, 1934, 284.
Robertson, A. W., New Year's Statement—January, 1934, 12.
Rochow, W. F., Super Refractories for the Iron and Steel Industry—August, 1934, 296.
Rosenberger, W. A., Blast Cleaning of Steel—August, 1934, 286.

S

Sanner, R. F., Illumination for Deseaming Purposes—September, 1934, 372.
Scott, Wirt S., Temperature Distribution of Electric Furnaces Compared to Fuel Fired Furnaces—July, 1934, 257.
Shallcross, W. M., Automatic Combustion Control of Open Hearths—September, 1934, 379.
Shover, B. R., Discussion: Anti-Friction Bearings in Connection with Cold Mills—January, 1934, 30.
Snyder, J. H., Developments in Pickling—March, 1934, 112-a.
Swope, Gerard, The Outlook for 1934—January, 1934, 13.

T

Terman, M. J., Insulating Firebrick Applications in Steel Heating Furnaces—June, 1934, 218.
Tower, Walter S., Review and Outlook for the Iron and Steel Industry—January, 1934, 12.
Tower, Walter S., Steel's Part in National Recovery—May, 1934, 185.

U

Umansky, L. A., Electric Drives for Flying Shears—June, 1934, 224.

W

Walker, W. S., Oxy-Acetylene Welding and Cutting in Metal Working—December, 1934, 479.
Wean, R. J., New Equipment for the Steel Industry—September, 1934, 371.
Weckstein, S. M., Precision Rolling Mills—November, 1934, 427.
Wilson, Lee, Tube Type Annealing Furnaces—August, 1934, 280.
Winne, H. A., Electrical Developments in the Steel Industry in 1933—January, 1934, 10.
Wolcott, Robert, Stabilization in the Steel Industry Under the National Recovery Act—July, 1934, 11.
Wright, R H., Electrical Developments in the Steel Industry in 1933—January, 1934, 10.
Electrical Equipment for High Speed Precision Merchant Mills—October, 1934, 406.

Y

Young, John L., Anti-Friction Bearing Progress in Steel Mill Equipment—September, 1934, 384.

ITEMS OF INTEREST

▲

The United States Steel Corporation announces the following changes in personnel: The resignation of C. L. Wood as vice president in charge of sales, in New York. Appointment of Robert Gregg, president of the Tennessee Coal, Iron and Railroad Company to succeed Mr. Wood. J. L. Perry, vice president of the American Steel and Wire Company, Cleveland, has been shifted to the presidency of the Tennessee company in Birmingham. Retirement of J. B. Carse as chairman of the purchasing agents' committee and director of purchases in New York. Charles H. Rhodes of the Illinois Steel Company has been appointed the successor to Mr. Carse.

▲

J. H. Vohr has been appointed superintendent of the new continuous hot strip mill of the Youngstown Sheet and Tube Company at Campbell, Ohio.

▲

E. Koenig has been named the chief engineer, Republic Steel Corporation, Youngstown District.

The Morgan Engineering Company announces the appointment of S. R. Cox, Jr., as Pittsburgh district manager to succeed J. J. McQuillen, who after forty-five years of service with the Company has requested a leave of absence and will probably in the future be located at the home office. Mr. Cox before becoming associated with the Morgan Company was sales engineer for the Hyatt Roller Bearing Company and previous to that was affiliated with the Carnegie Steel Company at Braddock.

▲

OBITUARIES

David Rees Bowen, vice-president of Farrel-Birmingham Company, Inc., and for forty-five years its chief engineer, died at his home at Ansonia Conn., on Saturday, December 29, 1934.

▲

William W. Macon, for 23 years identified with the editorial department of the Iron Age, during 14 years of that period as managing editor and editor in chief, died January 1 in New York.